

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Before the Board of Patent Appeals and Interferences

In re Patent Application of

HEIKKILÄ et al

Serial No. 09/913,331

Filed: October 11, 2001

Title: METHOD AND APPARATUS FOR TREATING PULP

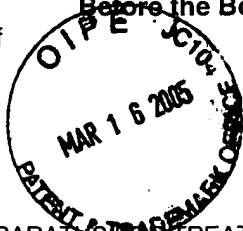
Atty Dkt. 3548-8

C# M#

TC/A.U.: 1731

Examiner: Marc ALVO

Date: March 16, 2005



AFI  
17m

**Mail Stop Appeal Brief - Patents**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

☐ **Correspondence Address Indication Form Attached.**

☐ **NOTICE OF APPEAL**

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences

from the last decision of the Examiner twice/finally rejecting  
applicant's claim(s).

\$500.00 (1401)/\$250.00 (2401) \$

☒ An appeal **BRIEF** is attached in the pending appeal of the  
above-identified application

\$500.00 (1402)/\$250.00 (2402) \$ 500.00

☐ Credit for fees paid in prior appeal without decision on merits

-\$ ( 0.00)

☐ A reply brief is attached in triplicate under Rule 41.41

(no fee)

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this  
paper, and attachment(s)

One Month Extension \$120.00 (1251)/\$60.00 (2251)

Two Month Extensions \$450.00 (1252)/\$225.00 (2252)

Three Month Extensions \$1020.00 (1253)/\$510.00 (2253)

Four Month Extensions \$1590.00 (1254)/\$795.00 (2254) \$ 0.00

☐ "Small entity" statement attached.

Less month extension previously paid on

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**TOTAL FEE ENCLOSED \$ 500.00**

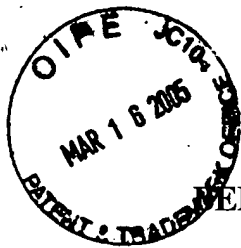
Any future submission requiring an extension of time is hereby stated to include a petition for such time extension.  
The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or  
asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this  
firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

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**APPEAL BRIEF**

Sir:

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last  
decision of the Examiner.

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**(I) REAL PARTY IN INTEREST**

The real party in interest is Sulzer Pumpen AG (also known as Sulzer Pump Ltd.), a corporation of Switzerland. Sulzer Pumpen AG is a wholly owned subsidiary of Sulzer Ltd. a corporation of Switzerland and having shares listed on the Swiss Exchange in Zurich.

(II) **RELATED APPEALS AND INTERFERENCES**

The appellant, the undersigned, and the assignee are not aware of any related appeals, interferences, or judicial proceedings (past or present), which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

**(III) STATUS OF CLAIMS**

Claims 1 to 8 and 17 to 33 are pending and have been rejected. No claims have been allowed.

**(IV) STATUS OF AMENDMENTS**

An amendment after final rejection was filed on December 10, 2004. During a brief telephone discussion, the Examiner indicated that the amendment after final has been entered.

A supplemental amendment after final rejection was submitted on March 16, 2005, to place claims 1, 17, 23, 25 and 29 in better form for appeal.

(V) **SUMMARY OF CLAIMED SUBJECT MATTER**

The claimed invention relates to a method and apparatus for treating pulp in a tank (20). Pulp is generally a wet mass of fiber, such as a mixture of processed wood chips and liquid.<sup>1</sup> Pulp is fed to liquid filled tanks during processing. The invention introduces pulp to a tank through either a bottom or top inlet. [See Abstract (“A characteristic feature of the method and apparatus for treating pulp according to a preferred embodiment of the invention is that that pulp is discharged from a batch digester (10) and fed either to the upper or lower part of a so-called blow tank (20), depending on the consistency of the pulp being discharged from the digester (10).”)]

Figure 1 of the specification shows that the consistency of pulp varies as pulp is discharged from a "digester" which converts wood chips to pulp. The figure shows the pulp consistency being low at the start of a pulp discharge (i.e., a blow) from a batch digester, increasing in density and then falling back to a low consistency at the end of the blow from the digester. Figure 1 illustrates that the pulp consistency varies with time as it is discharged into a blow tank that receives pulp from the digester. [Spec. p. 5, lns. 20-31]. The consistency of pulp may also vary as a function of time during pulp processes other than the discharge of a batch digester. The specification states “[i]n addition to the blow of a batch digester, the consistency of the pulp may vary during the process, e.g., in connection with various presses, washers, and/or various dilution devices to such

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<sup>1</sup> A dictionary definition of “pulp” is “a cellulosic material prepared by chemical or mechanical means chiefly from wood but also from rags and other materials and used in making paper and cellulose products.” Webster’s Third New International Dictionary, p. 1840 (1993).



an extent that the use of the apparatus according to the invention for filling the tank is well-founded.” [Spec. p. 10, lns. 14-18].

Pulp should mix with the liquor/liquid in a blow tank. The invention addresses a problem of pulp caking at the top of a tank to form a dense pulp mat. [Spec. p. 2, lns. 18-28]. The caked pulp does not mix with the liquor/liquid in the blow tank, as is intended. The invention sprays dilute pulp (low consistency pulp) across the top of the tank to soak and break-up any pulp cake. [Spec. p. 8, lns. 1-10]. The invention directs thick pulp (high consistency pulp) to the bottom of the tank so that the pulp will mix with liquor/liquid in the tank. [Spec. p. 7, lns. 13-26]. If thick pulp is added to the top a tank, the pulp tends to cake and become stuck in the tank. [Spec. p. 6, lns. 10]. If dilute pulp is added at the bottom of a tank, it tends to form a dilute liquor/liquid bottom layer of the tank that does not mix with pulp fibers. [Spec. p. 6, lns. 10-15].

In the invention, pulp is selectively fed to the top or bottom of the tank. [See Spec. Fig. 3]. An upper inlet pipe (40) discharges pulp to the top of the tank and a lower inlet pipe (42) discharges pulp to the bottom of the tank. A valve (38) directs the pulp to either the upper or lower inlet pipes (40, 42). [Spec. p. 7, lns. 9-26]. The valve may be controlled based on a signal from a pulp consistency detector monitoring the pulp or based on the power demand of the pulp blow pump (34). [Spec. p. 8, ln. 26 to p. 7]. The valve (38) is controlled to feed dilute pulp (low consistency pulp) to the top of the tank via inlet pipe (40) and feed thickened pulp (high consistency pulp) to the bottom of the tank via inlet pip (42). [Spec. p. 8, lns. 12-24].

**(VI) GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1 to 8 and 17 to 33 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

Claims 1 to 8 and 17 to 33 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(VII) ARGUMENT

The claims are supported by a written description in the Specification that discloses a valve directing pulp to an upper or lower inlet pipe depending on the pulp consistency. The valve redirects the pulp to either the upper or lower inlet pipe as the pulp consistency changes with time. Further, the claims are sufficiently definite such that they are understood by a person of ordinary skill.

I. The Written Description Supports The Claimed Invention

The application as filed provides a written description of the claimed invention. The rejection errs by imposing a requirement that the claim terms be literally present in the application as filed. [Advisory Action, Dec. 28, 2004 (“Applicant has not shown where the claimed language is disclosed. The portions of the specification which Applicant says supports the claimed limitations are more specific than the claimed terminology.”).] Contrary to the rejection, the claim terms “wherein the pulp fed is of varying consistency” (claim 1), “a consistency of the pulp changes in time” (claim 17) and “the pulp being fed at various times during the method has a dilute consistency” (claim 25) are fully supported by the original application, are not improperly broader than the original disclosure, and are definitive. [See e.g., Spec. p. 10, lns. 14-18 and p. 5, lns. 20-31].

A. Written Description Is Satisfied When The Disclosure Allows One Skilled In The Art ‘To Visualize Or Recognize The Identity Of’ The Subject Matter Purportedly Described”

The statutory requirement for a "written description" is:

***The specification shall contain a written description of the invention, and of the manner and process of making and using it, in***

such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

35 U.S.C. §112, ¶ 1 (1994) (emphasis added). The Federal Circuit has stated the standard for the written description requirement as:

This Court has interpreted 35 U.S.C. §112, ¶ 1, to require the patent specification to “describe the claimed invention so that one skilled in the art can recognize what is claimed.” In evaluating whether a patentee has fulfilled this requirement, our standard is that the patent’s “disclosure must allow one skilled in the art ‘to visualize or recognize the identity of’ the subject matter purportedly described.”

**Terms need not be used in haec verba, however. Instead, we have explained that the written description requirement can be satisfied by “words, structures, figures, diagrams, formulas, etc.”**

*Koito Manufacturing Co. v. Turn-Key-Tech LLC*, 72 USPQ2d 1190, 1199 (Fed. Cir. 2004)(Citations Removed) and (Emphasis Supplied).

B. Application Discloses Switching Between The Inlet Pipes As Pulp Consistency Varies

The specification discloses a source of pulp, e.g., digester, that feeds pulp at a consistency that changes over time to a tank. [See e.g., Spec. page 1, ln. 23 to page 3, ln. 22 (“During the discharge process, the consistency of the pulp may vary even between zero and ten percent.”); see also Spec. page 5, ln. 20 to page 6, ln. 15.]

Figure 1 shows a variation in the consistency of pulp during the discharge of pulp from a digester. The specification also discloses that the consistency of pulp varies from one discharge event to another. At page 2, starting at line 23, the Specification states:

“Especially when running the tank in order to empty it or sometimes even in normal running situations, depending on

the surface level, said filtrated pulp causes remarkable consistency variations when entering the mixing zone at the bottom part of the tank, which consistency variations can not be equalized in the mixing zone, but the pulp is discharged further at too high a consistency.”

The above-quoted section of the application refers to variations in pulp consistency during different discharge events, e.g. normal operation and emptying the tank. The specification also discloses that pulp consistency varies from tank discharge event to tank discharge event at page 5, lines 20-31 (emphasis supplied), which states:

“The time interval between two blows is about 20-40 minutes, depending on the size and number of digesters. In our studies we have noticed that said interval in the order of about half an hour is sufficient to cause the pulp on the surface in the blow tank to filtrate, or thicken, whereby a relatively solid, and continuously solidifying, pulp cake is formed onto the surface of the pulp already existing in the tank. . . . **That is, each mill and each operator there and even each digester may produce different consistency profiles as the function of discharge time.**”

The specification further states that the consistency of the pulp is affected by the “quality and type of pulp” (p. 2, ln. 22-23) which discloses that the consistency of the pulp varies as the tank receives a first type of pulp (during a first discharge event) and later receives another type or quality of pulp (during a second discharge event). Because the specification discloses that a tank may receive pulp of varying consistencies and types, the specification provides a written description of the claim terms “wherein the pulp fed is of varying consistency” (claim 1), “a consistency of the pulp changes in time” (claim 17) “the pulp being fed at various times during the method has a dilute consistency” (claim 25).

Further, the valve and valve control scheme operates both during a single discharge event and during multiple discharge events. One of the valve control schemes disclosed in the specification is to automatically switch the valve (38) depending on a change in pulp consistency. [Spec. p. 8, ln. 26 to p. 9, ln. 24]. This control scheme will operate the valve during a single digester discharge event and during a sequence of discharge events. The control scheme does not control the valve (38) differently if the pulp consistency changes during a single discharge event or from one discharge event to another. Because the disclosed valve control system that monitors pulp consistency operates during a single discharge event and from one event to another, the written description of the specification support operation of the claimed invention both during a single discharge event and during multiple discharge events.

The rejection relies on the fact that Figure 1 shows that pulp varies during a single discharge event. Figure 1 illustrates an example of the problem of varying pulp consistency that is solved by the invention. Figure 1 does not limit the scope of the claims to one discharge event or imply that the only problem addressed by the invention is varying consistency of pulp during a single discharge event.

Contrary to the final rejection, separate embodiments of the claimed invention need not be disclosed in the application to ensure that the claims cover each different circumstance in which the pulp consistency may vary. The invention as disclosed addresses variations in pulp consistency regardless of whether the consistency changes during a single discharge event or from one discharge event to another. The inventive technique is equally applicable to variations in pulp consistency during a single discharge

and to changes in consistency from one discharge event to another. The written description is as applicable to situations where the pulp consistency varies over multiple discharge events and where the pulp consistency variations occur during a single discharge event. Accordingly, the specification provides a complete written description of the pending claims. The written description rejection should be overturned.

## II. Claims are Definite

The final rejection that the claims are indefinite under 35 USC §112, second paragraph, is based on the same grounds as is the rejection for lack of a written description. In rejecting the claims as being indefinite, the final rejection states that:

The terms ‘wherein the pulp fed is of varying consistency’, ‘a consistency of the pulp changes in time’ and ‘the pulp being fed at various times during the method has a dilute consistency and a condensed consistency’ were not originally disclosed and thus their meaning is not clear. The term ‘consistency of the pulp changes in time’ is indefinite. It is not clear how it changes in time since the time period has not been defined. Also the term ‘condensed consistency’ is indefinite. What is a condensed consistency? Where at the terms defined in the specification?

[Final Rejection, p. 3.]

The rejection of claims 1-8 and 17-33 as being indefinite should be reversed for substantially the same reasons as stated above for reversing the rejection for lack of a written description. A claim is definite if “those skilled in the art would understand what is claimed when the claim is read in light of the specification.” *Bancorp Services LLC v. Hartford Life Insurance Co.*, 69 USPQ2d 1996, 1999 (Fed. Cir. 2004). For purposes of this appeal, persons of ordinary skill in the art of pulping will understand the claim terms “wherein the pulp fed is of varying consistency”, “a consistency of the pulp changes in

time” and “the pulp being fed at various times during the method has a dilute consistency and a condensed consistency.” The term “consistency” refers to the consistency of the pulp slurry that is a mixture of cellulosic pulp fiber and liquor. [See Footnote 1 providing a dictionary definition of pulp]. A person of ordinary skill in the art would understand that the Specification shows that the consistency of pulp can change with time during a single discharge event and from one discharge event to another. [See also, Spec. p. 10, lns. 14-17].

The claims are not indefinite for requiring the pulp consistency to vary with time. The suggestion that the claims be limited to a specific time period, such as one blow tank discharge or 40 minutes, would unnecessarily limit the scope of the claims. Further, the Specification discloses that the consistency of pulp may change during or between processes other than the discharge of a digester. These other processes include “presses, washers and/or various dilution devices”. [Spec. p. 10, lns. 14-18]. A person of ordinary skill in the art would understand that the claims refer to pulp consistency that varies with time as the pulp is discharged from the digesters, presses, washers and other dilution devices used to process pulp.

The rejection of the claim term “condensed consistency” is moot. That term has been replaced by “thick consistency” in the Amendment After Final Rejection that has been entered. The specification refers to a blow tank to have “thicken” pulp and, at other times, to have “diluted” pulp. [See, e.g., Spec. p. 7, lns. 22-26 and also p. 2, ln. 5; p. 3, ln. 6 and p. 5, ln. 26.]. Accordingly, the term “thick consistency” is supported in the specification.

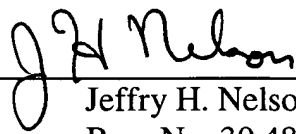


III. Conclusion

In conclusion it is believed that the application is in clear condition for allowance; therefore, early reversal of the Final Rejection and passage of the subject application to issue are earnestly solicited.

Respectfully submitted,

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(VIII) CLAIMS APPENDIX<sup>2</sup>

1. A method of treating pulp, by which method pulp is discharged from a process apparatus and fed into a blow tank or storage tank, wherein the method comprises:

discharging pulp from the process apparatus and feeding the pulp to the blow tank or storage tank, wherein the pulp being fed is of varying consistency;

feeding the pulp either to an upper part of the tank or to a lower part of the tank depending on a consistency of the pulp being fed from said process apparatus in such a manner that when the pulp is at a consistency below a certain predetermined discharge consistency it is fed into said tank through the upper part of the tank and when the pulp is at a consistency above said predetermined discharge consistency the pulp is fed into said tank through the lower part of the tank.

2. A method according to claim 1, further comprising controlling the feeding of pulp to the upper part and lower part of the tank by a consistency detector arranged in a discharge tube of said process apparatus.

3. A method according to claim 2, wherein said consistency detector is a blow pump.

4. A method according to claim 1, wherein said process apparatus is a batch digester.

5. A method according to claim 1, wherein the feeding of pulp is controlled according to a pre-determined consistency profile.

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<sup>2</sup> Claims include changes made in March 16, 2005 and December 10, 2004 Amendments.

6. A method according to claim 5, wherein said predetermined consistency profile varies as a function of time, and whereby said feeding of pulp is controlled based on time passed from a beginning of an operation of the digester discharge.

7. A method according to claim 1, wherein the feeding of pulp through the upper part of the tank is distributed onto a whole cross section of the tank.

8. A method according to claim 1, wherein the feeding of pulp through the upper part of the tank is distributed on top of pulp in the tank.

9 to 16 (Cancelled).

17. A method of treating pulp, by which method pulp is discharged from a process apparatus and fed into a blow tank or storage tank, wherein the method comprises:

discharging pulp from the process apparatus and feeding the pulp to the blow tank or storage tank, wherein a consistency of the pulp changes in time;

feeding the pulp either to an upper part of the tank or to a lower part of the tank depending on the consistency of the pulp being fed from said process apparatus in such a manner that when the pulp is at a consistency below a certain predetermined discharge consistency it is fed into said tank through the upper part of the tank and when the pulp is at a consistency above said predetermined discharge consistency the pulp is fed into said tank through the lower part of the tank.

18. A method according to claim 17, further comprising controlling the feeding of pulp to the upper part and lower part of the tank by a consistency detector arranged in a discharge tube of said process apparatus.

19. A method according to claim 18, wherein said consistency detector is a blow pump.

20. A method according to claim 17, wherein said process apparatus is a batch digester.

21. A method according to claim 17, wherein the feeding of pulp is controlled according to a pre-determined consistency profile.

22. A method according to claim 21, wherein said predetermined consistency profile varies as a function of time, and whereby said feeding of pulp is controlled based on time passed from a beginning of an operation of the digester discharge.

23. A method according to claim 17, wherein the feeding of pulp through the upper part of the tank is distributed onto a whole cross section of the tank.

24. A method according to claim 17, wherein the feeding of pulp through the upper part of the tank is distributed on top of pulp in the tank.

25. A method of treating pulp, by which method pulp is discharged from a process apparatus and fed to a blow tank or storage tank, wherein the method comprises:

discharging pulp from the process apparatus and feeding the pulp to the blow tank or storage tank, wherein the pulp being fed at various times during the method has a dilute consistency and a thick consistency;

feeding the pulp either to an upper part of the tank or to a lower part of the tank depending on a consistency of the pulp being fed from said process apparatus such that the pulp at the dilute consistency it is fed to the upper part of the tank and pulp at the thick consistency is fed to the lower part of the tank.

26. A method according to claim 25 wherein the dilute consistency is a pulp consistency below a predetermined consistency and said thick consistency is above the predetermined consistency.

27. A method according to claim 25, further comprising controlling the feeding of pulp to the upper part and the lower part of the tank by a consistency detector arranged in a discharge tube of said process apparatus.

28. A method according to claim 25, wherein said consistency detector is a blow pump.

29. A method according to claim ~~[[28]]~~ 25, wherein said process apparatus is a batch digester.

30. A method according to claim 25, wherein the feeding of pulp to either the upper part or the lower part of the tank is controlled according to a pre-determined consistency profile of the pulp.

31. A method according to claim 30, wherein said predetermined consistency profile varies as a function of time, and whereby said feeding of pulp is controlled based on time passed from a beginning of an operation of a digester discharge.

32. A method according to claim 25, wherein the feeding of pulp through the upper part of the tank is distributed over a cross section of the tank.

33. A method according to claim 25, wherein the feeding of pulp through the upper part of the tank is distributed over a top of the pulp in the tank.